KEMP'S RIDLEY SEA TURTLE RECOVERY TEAM

STAKEHOLDER MEETING OVERVIEW

On 13-14 April 2004, the Kemp's Ridley Sea Turtle Recovery Team held a meeting with representatives from a diversity of stakeholder groups at the Hilton Garden Inn in Houston, Texas. The purpose of the meeting was to exchange information and discuss the Kemp's ridley recovery planning process, major threats to the species, and stakeholder concerns. Team members gave presentations on the recovery planning process, recovery criteria, Kemp's ridley life history, biology, and population trends, and the Team's efforts to date to develop a threats analysis for Kemp's ridleys.

Twenty-two of the more than 120 stakeholder representatives invited to the meeting were in attendance, including representatives from fishing industries, fisheries management councils, conservation organizations, academia, and State and federal agencies.

Breakout sessions generated valuable discussion and feedback about threats to Kemp's ridleys and the recovery planning process. The first day's breakout session gave stakeholders an opportunity to comment on the presentations given by the recovery team during that morning, specifically on the recovery planning process, the bi-national recovery effort, population trends, life history and biology, and threats analysis. On the second day, stakeholders divided themselves into two groups (terrestrial or marine) based on their experience and interests. Stakeholders were asked to identify additional categories of threats to Kemp's ridleys, to recommend ways to reduce impacts of these threats, and to identify the potential economic, political, and conservation ramifications of these approaches.

Kemp's Ridley Recovery Team
Summary of Comments from Stakeholder
April 13-14, 2004
Hilton Garden Inn, Houston, Texas, USA

Overview: Over 20 people attended the Kemp's ridley Recovery Team stakeholder meeting convened in Houston, TX on April 13-14, 2004. Participants included members of non-government environmental organizations, fisheries associations and commissions, federal and state employees, academia, and other interested constituents. The stakeholder meeting was organized to receive input from participants through three breakout groups. On the first day, participants in each group were given the same questions on the following topic areas: (1) recovery planning process; (2) life history, biology, and population assessment; and (3) threats assessments. On the second day, stakeholders participated in one of three groups based on specific topic areas/activities that may affect recovery: (1) marine fisheries; (2) marine non-fisheries; and (3) terrestrial. The following is a brief (not exhaustive) synopsis of the main issues raised by participants.

Recovery Planning Process: Participants felt that the excellent collaboration between Mexico and the U.S. needs to continue and be supported in the future. Stakeholders were particularly concerned about securing funding for the efforts at Rancho Nuevo and other beaches, and identifying funding sources for needed research. Additional partnerships between the government and public sectors should be identified to ensure long-term funding to support recovery goals. The recovery planning process would be a good avenue to describe the funding needs for the recovery of the Kemp's ridley. Participants also felt that more than one stakeholder meeting was necessary to provide adequate input regarding the planning process.

Life History, Biology, and Population Assessment: Participants recognized that there are many data gaps for Kemp's ridleys, especially for the in-water portion of their life cycle. Suggestions for research areas included refinement of demographic parameters especially survival rates for each life stage. The revised Recovery Plan should identify those research needs and identify the funding that will be needed to complete the studies. Several participants expressed concern that the recovery criteria – attain a population of at least 10,000 females nesting in a season – may be changed without adequate justification. They cautioned that any revision to the recovery criteria must be based on the best scientific and commercial data available and must clearly articulate any assumptions made in the absence of empirical data. Some participants felt that rather than an absolute number of nesting females, a better measure of 'recovery' would be to estimate the quality, size, and frequency of a functional arribada. Finally, several participants felt that the existing recovery plan lacked a habitat focus, and requested the Recovery Team to focus on an ecosystems approach in the revised document.

Threats General: Participants expressed concern about using the concept of reproductive equivalents in the threats analysis because this approach may de-emphasize the importance of recovery actions on the beach. Participants highlighted the positive trend in the Kemp's ridley population as an indicator of the success of existing measures to reduce threats. The revised

Recovery Plan must highlight these actions rather than just add to the laundry list of possible threats. Stakeholders suggested that the Recovery Team focus on the rate of mortality rather than the absolute number. The rate of mortality would not change as the population grows, whereas the absolute number would increase or decrease with the population trend.

Threats Terrestrial: For the most part threats to the nesting beaches in Mexico are limited. The main beach at Rancho Nuevo is a sanctuary as well as a wetland of international importance. However, other beaches such as Tepehuajues and Barra del Tordo have not obtained this protection. Increasing tourism and coastal development in Mexico may place stress on the Kemp s ridley terrestrial habitat. Predation on nest left in situ is also a problem in Mexico. Illegal harvest by humans remains an issue and feral dogs, skunks, and coatis are known to prey on the eggs. In the U.S., the main nesting area exists in Padre Island, Texas. Padre Island is largely protected as a National Seashore, however small portions of the National Seashore and areas outside of the Seashore do experience shoreline armoring and beach restoration. The major threats on Texas beaches are light pollution and beach vehicular driving. Vehicles driven at night with lights on likely contribute to hatchling misorientation. Several years ago a female was run over by a vehicle (Matagorda Peninsula) and several hatchlings were directly killed by a vehicle (Mustang Island and North Padre Island). Although the National Seashore implements measures to reduce light pollution such as shielding street lights, lights from beach development outside of Padre Island National Seashore could also misorient hatchlings.

Threats Marine Fisheries: In order to fully understand the threat from various fisheries, a comprehensive characterization of each fisheries is needed. Effort level, gear deployment, and differences in regional fisheries practices are important to understanding and prioritizing the threats to Kemp's ridleys. The Recovery Team should consider revisiting the 1947 Herrara film to ensure the baseline number for an arribada is accurate and they should only consider the increasing portion of the curve in the population model trajectory (because the decreasing portion of the curve represents a residual portion of the population left over from when there was no egg production due to heavy poaching) to predict future effects of incidental capture in fisheries.

Threats Marine Non-Fisheries: The Recovery Team should analyze data sets to determine the impacts of oil and gas activities, military explosions, boat strikes, and recreational fishing tournaments. The Recovery Team should also anticipate future threats such as increased boat strikes, oil and gas platform removals, detrimental impacts to the habitat as a result of artificial reefs, and coastal development.

Kemp's Ridley Recovery Planning - Stakeholder's Meeting
Breakout Session on the Recovery Planning Process - Group 1
April 13, 2004

Participant Comments

Group facilitators: Earl Possardt and Oscar Ramirez
Rapporteur: Robyn Cobb

Recovery Planning Process

- Questions about time line to expect draft Recovery Plan and the process for stakeholders to provide input along the way, as well as to review the draft. The end of 2005 was given as a likely date for the draft. Currently, the Recovery Team is working on identifying threats and pulling together the information for the threats assessment. Team composition includes academics, agencies, and the fishing industry, but this meeting is the 1st stakeholder direct involvement. Avenue in the future is the web site, email and direct contact with team members. Encourage stakeholders that attended this meeting to stimulate those who did not attend to use the web page and email.

- There should be at least one more public meeting. A lot of new information/new techniques since last revision, there may be a lot of public input. Will be another stakeholder meeting in Mexico at the end of June - open to all, not just for scientists - held simultaneously with a National sea turtle fair in Tampico.

- Recommendation to use an ecosystem approach - a true stock assessment - using data on wider variety of components than just the nesting beach, since marine part of Kemp's existence not adequately addressed to date. Look at status of protection for the different areas in which the species is found. Although most of the data in the models comes from nesting beaches, do need more from other habitats.

- Discussion about funding for the recovery process since assessment to fill identified data gaps is expensive. The Recovery Team has to identify funds to accomplish each task. There is new legislation to provide dollars for nesting beach work in other countries. For in-water work, funding needs to go into NMFS budget. The Recovery Process seems like a good avenue to be more explicit about this issue - where do studies need to happen and how much will they cost? Industry's had to invest heavily in gear and would like to see what the effect is on the turtles.

- Questions about level of support for the Kemp's nesting beach projects at the top level FWS. Good idea to take Director to Rancho Nuevo - give him a first hand look at the project.

Binational Recovery Process:

- Question as to whether the bi-national process is primarily focused on nesting beaches or whether there have been any in-water assessments? Although there's been satellite tracking, need to know more about juveniles. Develop a comprehensive Recovery Process, using all information that's been gathered in both countries, identify driving forces and specific actions directed at specific threats. Need an agreement between the two countries specifically for this Recovery Process.

- Question about the satisfaction level of both countries with the team composition. Now have good working team. Mexican members of the team would like more involvement from Mexico's national fisheries agency.

Kemp's Ridley Life History, Biology, and Population Trends:

- Question about the Recovery Planning process and the need for additional studies - whether the process includes waiting on the results of studies. The Recovery Plan must use the best available data, however the Plan can recommend additional studies. The Recovery Team's responsibility is to develop the Recovery Plan. The Team does not run nesting beach projects, although some folks on Recovery Team are also heavily involved in the projects. Discussion differentiating the Working Group from the Recovery Team. The Recovery Team can make recommendations about data needs.

- Discussion about information needs for this species, i.e. where are the sub-adults, and whether these should be filled before revising the Recovery Plan. Comment made that there Recovery criteria have to be based on the data that are available, but it is valid during the Plan revision process to identify all data gaps.

- There are still a lot of habitat issues looming in the Gulf of Mexico. Bottom line is that funding is needed to do the work.

- In the past, nesting surveys were the easiest and most reliable way to assess the population numbers. Trends? Are stranding data significant? Gap of knowledge about regional inshore use. Geographic distribution changes - current thinking on habitat shifts - effects of global warming? There is too much speculating about the differential uses of habitats inshore- (bays, nests, sounds) – this information is critical to threats assessment.

- Question as to whether the Recovery Plan will identify any biologically essential habitat for Kemps, either inshore and/or nesting beach? Discussion about importance of considering habitat essential to the species, as opposed to designating official Critical Habitat which is not likely to be recommended.

- Question regarding sub-populations of this species was answered in the negative - only

one genetic pool.

- Genetics work shows that Kemp's has plenty of heterozygosity with regard to a question about the effective population size. Questions were raised about longevity? The sizes of the populations in the age structure model? Discussion about the limitations of using the total population estimates from the model. Although it seems to predict nest numbers well, does it give a good idea of population size? Reproductive value of ages within a stage? Inshore population cycles of abundance and whether these are related to cycles on the nesting beaches?

Kemp's Ridley Recovery Planning - Stakeholder's Meeting

Breakout Session for Terrestrial Impacts
April 14, 2004

Participant Comments

Group facilitators: Earl Possardt and Oscar Ramirez
Rapporteur: Robyn Cobb

Discussion in the terrestrial breakout session initially dealt with listing the significance of, and ways to reduce, each of the following impacts:

- Shoreline stabilization - such as beach armoring and/or beach restoration
  Not a big issue in Mexico for Kemp's, with the possible exception of Tampico area.
  In Texas - becoming more of an issue on upper coast. Texas General Land Office's (TGLO) policies on beach nourishment - attempts to restrict activities to certain window of time - from late October to early March - to avoid nesting season. Also dealing with modifying placement of geotubes, etc on the beach. One recommendation was to eliminate Federal insurance for beachfront development. Also to work with coastal municipal governments to avoid situations such as the one on S. Padre Island where municipality gave permission to knock down dunes to 10' in front of condos due to obstructed views. Work with municipal governments to modify ordinances.
  Question as to whether deposited sand deters females or prevents nests from being found?

- Beach Erosion
  At Padre Island National Seashore (PINS), not big issue, is more localized in a small area at the end of park. Upper Texas coast - sea level rise problem due to shallow coastal shelf. Mexico's beaches have been through bad storms without real problems, but 2004 winter storm weather event took away the beach corral. Typical pattern - beach erodes in winter; builds in summer. Currently in Mexico, sediment starvation is not a problem, not a lot of dams on the rivers. Unsure how the dammed up Rio Grande will ultimately affect beach erosion for Texas and Mexico.

- Coastal Construction
  Rancho Nuevo has sanctuary status (for 40-50 km beach) which is a commitment within the Mexican federal law. Trying to get sanctuary status for Tepehuajes and Barra del Tordo as well. Rancho Nuevo also now has RAMSAR designation (wetland of international importance - international recognition - Oscar will send the RAMSAR polygon). This will help in protection - requires regular reporting.
  In Mexico, also an effort to have federal concessions for any construction on sandy beaches - would have to take into consideration turtle nesting beaches. Is some concern for situation in Veracruz since it has one of the beaches used by Kemp's while it is also one of the closest beaches to Mexico City.
- Light Pollution
  Lot of evidence for the need for total shielding of lights - good data to show adverse

effects of light pollution - deters some nesting females and mislead hatchlings. Questions about how Florida deals with this - have a basic template, then counties and/or cities develop their own ordinances. In Florida, cannot have any direct light shining onto the beach. Can still have a problem with glow, but can deal with this if you have high dunes and vegetation. Texas is just now starting to consider this need. At PINS, they shield street lights, so their biggest problem is probably vehicles at night. As long as eggs are incubated in hatchery and releases are controlled, not a problem but if nests left in situ could become an issue

- Oil Fuel and Tar on Nesting Beaches
  Catastrophic (e.g. Ixtoc) vs chronic threats. Additional concern - damage that could occur during cleanup activities. Need steps in Recovery Plans to deal with oil spill contingency planning. In Mexico, for any contingency plans, need education program for the individuals who would actually be responding, since PEMEX engineers will be supervising but may not be knowledgeable about turtle biology.

- Beach Cleaning
  In Texas, some areas getting regular raking, scraping, even use of a small tractor in southernmost part of coast. There is potential to educate the beach cleaning staff through a program like the training that Dr. Shaver provides.

- Beach Vehicular Driving
  In Texas, there are vehicles on most of coast. Can be an impact to nesting females and for undetected nests. Several years ago, a nesting female was run over by a vehicle on Matagorda Peninsula. Same year, 3 nests found at hatching and for 2 of these nests, instances of nestlings killed by vehicles. So far on Galveston Island, nesting has been on non-vehicular beaches (comprises 13 miles of the island which will eventually be 17-18 miles). Public response so far has been mixed, this has been somewhat controversial, with support for restricting vehicle access from beachfront owners and opposition from fishermen and handicapped.
  In Mexico, most of the coast is not accessible for vehicles, however in some states in Mexico, tourist-related use of ATVs is becoming a problem.

- Predation
  In Mexico, not a problem on beaches of Tamaulipas where eggs are in corrals, but nests left in-situ have been predated by mammals (skunks, coatis). Do need a way to determine effects. Needs assessment in Veracruz, concerns about feral dogs on beaches.

- Illegal and Legal Harvest
  Is an issue in Mexico - need to increase enforcement - get community involvement, so local people protect nests in their area (ex: some success in Oxaca where the turtle comsumption culture is even stronger). For Kemp's ridleys, the state of Tamaulipas brings grade school students from around the state to one of the camps for 1st hand educational experience. Have been doing this for long years and one of the payoffs is that some of these students have gone on to become camp directors. One key is to provide

economic development opportunities, e.g., ceramics factory at LaPesca started by Dr.'s Burchfield and Luevano. Other communities have expressed interest in starting cottage industries as well. Current situation for Kemp's with regard to poaching is that PROFEPA (Mexico's EPA) and the Mexican Navy are a presence in Tamaulipas and local people are aware of that. There are still villagers who remember egg consumption - supposed aphrodisiac qualities. The availability of pharmaceutical substitutes, like Viagra, may play into this in the future.
In Texas, harvest of turtles on the beach is not currently an issue.

- Stormwater Runoff
  On Mexico's beaches, this has caused relocation of camps. Not an issue in Texas.

- Foot Traffic
  Does not seem to be a real issue for Kemp's

- Sand Fencing
  In Mexico, not using sand fencing.
  In Texas, although there are some areas with sand fencing, has not been a big problem. On Texas' Upper Coast, do use these fences to rebuild dunes after storms. Pattern of placement is short segments w/gaps on upper part of beach. Can be a problem for turtles if improperly placed.

- Recreational Beach Equipment
  Concern is related to the potential for poles to be stuck into undetected nests or for hatchlings to be trapped as they crawl to the water. Examples: volleyball, tents, beach umbrellas, bonfires. In the case of bonfires, potential two-fold problem: too much heat over an undetected nest or hatchlings crawling toward a fire (source of light). Currently not believed to pose much of a threat in either country, but with expanding development and tourism is something to think about.

- Root Damage
  Roots can penetrate eggs or can trap hatchlings. Shading from trees/shrubs can kill other ground cover vegetation and thereby exascerbate erosion, e.g. problems in India w/ Casurina plantations. Salt cedar threat. There are dune restoration projects going in, mostly using native vegetation. Do need plant management in nesting areas. May need education/outreach about appropriate plant species to use.
  In Mexico there is use of Australian pine for stabilization and wind barriers. Mexico does have regulations but needs better enforcement.
  Need to offer list of alternative plants, more acceptable to use.

- Beach Trash
  Can be a problem for nesting females or hatchlings. Sometimes main problem is just volume, e.g. lot of plastic bags, balloons. Have found trash in excavated nests. Sargassum can be an obstacle to nesting females or to hatchlings. In Mexico, although sargassum does comes in, seems to be worse on Texas beaches. Action item is to check

out research on sargassum, conditions that increase its abundance. Questions about beach cleaning activities that push sargassum up to the foot of the dunes. Suggestion to do education/outreach program with beach cleaning entities. Explain the role of sargassum in building and maintaining the beach - also that beach cleaners need to notify appropriate agencies or entities when dead turtles are located, instead of burying turtles. Galveston turtle nesting is so new - USFWS Clear Lake Field Office and NMFS doing great job of education. TOLL FREE TURTLE NUMBER - 1-866-TURTLE5 is provide by Sea Turtle Restoration Project supported by personnel from state/federal/universities and the Gladys Porter Zoo.

- Sediment Loss
  Contributing factors: Dams on rivers. Jetties preventing longshore movement of sand. The Corps of Engineers is working on regional sediment management - moving trapped sand.

Other Issues not listed on Outline:

- Headstarting discussion: In light of the recent nesting on Galveston, consider bringing eggs (20-25 clutches) up from Mexico to continue head starting out of Galveston. This topic is something for the Working Group to handle. Several dimensions to this: In Mexico, trying to reach the goal of being able to leave nests in situ, where predator swamping is effective, so there's not a big advantage in moving Mexican eggs into Texas. It's a large paperwork and manpower exercise and the money may be better spent on the nesting beach.

- Question was raised as to why there were not historically large numbers of nests in Texas?
  Answer: Have anecdotal information but not a lot of published data on historical numbers. Paper published during days of TEDs development referred to the time period of the 1930s and alluded to all the shrimpers catching 50 turtles /year, so we may now be in the stage of "reestablishing what was here", if indeed Texas killed off its turtles. Unpublished records from Padre Island National Seashore hint at possible reasons for turtles disappearing, including use of area as a bombing range, livestock grazing, as well as the fact that nesting Kemp's (Kemp's nests) are hard to find Kemps. Natural expansion from the Rancho Nuevo epicenter will increase nesting in Texas. Part of the recent successes in Texas is the Headstart Program. A large number of head started turtles went out 12 years pre-TEDs.

Ranking of Critical Issues:

- In Mexico
  Predation - illegal harvest - managing
  Spill response - potential catastrophic events
  Exotic vegetation - list of alternatives
  Prevention approach
- In Texas
  Light pollution
  Predation

Beach driving
Development/lights/beach cleaning/shoreline stabilization
Municipal governments - incorporation of turtle concerns
Oil / fuel / tar

Additional Suggestions:

- Texas General Land Office (TGLO) through their Coastal Management Program (CMP) - Go back through the CMP to see whether turtle concerns are incorporated. Determine whether municipal governments have to be consistent with those features of the CMP that would protect turtles.

- Post Recovery Protection - Should have the following items written directly into the Recovery Plan: 1) Mexico's beach and water protection will continue and, 2) TED use continues.

- Carole Allen, Gulf Office Director for Sea Turtle Restoration Project handed out a proposal for consideration in the revised recovery plan for an international protected "swimway"area from Tampico to Aransas NWR as well as the need for protected foraging areas along the upper Texas coast and southwestern Louisiana. The full document is part of the files and will be distributed to the team during discussions of needed recovery actions.

Kemp's Ridley Recovery Plan Stakeholder Meeting

Breakout Session on the Recovery Planning Process - Group 2
April 13, 2004

Participant Comments

Group Facilitators: Therese Conant, Sheryan Epperly, and David Owens
Rapporteur: Kristy Long

Recovery Planning Process:

- Convene a second stakeholders meeting when draft plan is completed.
- Include comments received on the proposed rule (official proposed recovery plan) in the final recovery plan as an appendix.

Bi-national Recovery Process:

- Support elevation of the Kemp's ridley recovery program, in terms of both funding and importance at the bi-national level.
- Build partnerships to ensure long-term funding from both government and non-government organizations.

Kemp's Ridley Life History, Biology, and Population Trends:

- Clarify survival rates applied to each life history stage.
- Determine whether there are differences in survival rates between traditional beaches (e.g., Rancho Nuevo) and non-traditional beaches (e.g., Padre Island).
- Clearly define recovery goals in terms of population trends.
- Concerns were raised about changing the target population estimate from the 1992 Recovery Plan in terms of economic impact and funding sources.
- Estimate the "quality", size, and frequency of arribadas as a possible census of the population; compare data from the 1960s to present.
- Use density, size, or frequency of arribadas as a recovery criterion.
- How will the 10,000 nesting female goal in the recovery plan be impacted by the current estimate of the number of nests per female

Threats Analysis Process:

- Include climate change as a category in the threats analysis.
- Strong concerns were raised that using reproductive equivalents in the threats analysis may de-emphasize early life history stages and give inadequate emphasis to recovery actions already proven to contribute to the observed recovery
- Population is increasing exponentially despite all existing threats and therefore actions taken under the existing recovery plan have already reduced if not completely eliminated current threats and emphasis in the revised plan needs to emphasize on those actions that have already been demonstrated to be successful.

- There is a real risk that putting too much emphasis on expanding the list of threats, and on prioritizing threats in terms of “reproductive equivalents” may lead to insufficient emphasis on and funding of highly successful recovery actions.
- Separate the shrimp trawl fishery from other bottom trawl fisheries and include as its own category. Likewise, separate offshore and inshore trawls and skimmer trawls into individual categories.
- Improve estimate of shrimp trawl fishery effort.

Kemp's Ridley Recovery Plan Stakeholder Meeting

Breakout Session on Marine Threats Analysis
April 14, 2003

Participant Comments

Group facilitators: Therese Conant, Sheryan Epperly, David Owens, and Mike Ray
Rapporteur: Kristy Long

Marine Non-Fisheries Threats

General Comments:

- Evaluate data sources (e.g. STSSN) for impacts to Kemp's ridleys.
- Correlate STSSN data to activities (e.g., oil and gas activities, military explosions, boat strikes and recreational fishing tournaments).
- Identify existing regulations that currently address listed threats and ensure compliance.
- Rank threats as to how they may be limiting recovery, specifically the population rate of increase.
- Need to anticipate future activities and impacts (e.g., boat strikes, oil and gas platform removals, and artificial reefs) that have potential to affect recovery.
- Approach regulations regionally to assist in detecting changes in the population.
- Threats analysis should reflect increase in population versus increase in threat.
- Realize the rate of mortality should not change as the population grows; therefore, highlight those threats for which mortality does increase.

Legal Harvest:

- Determine whether legal harvest of Kemp's ridleys is occurring throughout the range.

Vessel Strikes:

- Evaluate vessel (including submarines) strikes in channels using data from the U.S. Army Corps of Engineers and STSSN.
- Quantify vessel strikes occurring both pre- and post-mortem.
- Determine distribution of each life history stage in all habitats (i.e., Kemp's ridleys may not be present in channels in the western Gulf of Mexico).

Education and Outreach:

- Add a section on education and outreach, regional in scope, to the recovery plan.

Recommended Additional Threats:

- Add harassment. Develop approach regulations similar to marine mammal harassment regulations because harassment may have sublethal impacts (e.g., decrease in reproductive success) on Kemp's ridleys.

- Add hypoxic zones and ecosystem effects as related to prey species.
- Add harmful algal blooms (HABs).
- Add artificial reefs (e.g., tires and aircraft carriers) and associated ecosystem changes.
- Possibly add navy activities such as sound effects from detection technologies.
- Possibly add windmills at sea and underwater cables.
- Possibly add chemical pollution.
- Possibly add interspecific competition from sting rays (sublethal effects).
- Add geotubes (i.e., sand socks) to Terrestrial Threats and link to sand mining.

Recommended Changes to Threats:

- Change "ship channel dredging" to "dredge activities."
- Combine "marine debris ingestion" and "marine debris entanglement" categories since the source of both is illegal disposal.
- Change "oil and gas platform removals" to "oil, gas, and liquid natural gas (LNG) activities."

Marine Fisheries Threats

General Comments:

- Ensure regional characterization of fisheries is reflected in the comments and narrative of the threats analysis.
- Ensure adequacy of protective regulations post delisting on the ESA.
- Recognize and evaluate fishery effort.
- The introduction to the threats analysis should describe the changes in fisheries over the past 20 years, e.g., effort reduction, gear modifications, time/area closures.
- Standardize analysis of effort to compare across years.
- Ensure adequate sampling when characterizing fisheries (e.g., some areas represent less than 3%).
- Identify State and federal fishery regulations that may affect Kemp's ridleys.
- Ensure data sharing between responsible management authorities.
- Do not seek to further reduce threats until the magnitude of those threats has been determined.
- For the purpose of modeling, use the whole time series. For the purpose of projecting future effects, use only the increasing portion of the curve to estimate mortality rates (because decreasing portion of the curve represents a residual portion of the population left over from when there was no egg production due to poaching.) Suggest using only hatchling input.
- Revisit the 1947 Herrera film and qualitatively estimate arribada size.
- Further shrimp fishery restrictions would result in adverse economic and political results.
- Few gillnets are fished in the Gulf of Mexico.
- Evaluate the use of STSSN data.
- Support in-water population index.
- If funding is limited, suggest allocating funds to efforts that will have the greatest impact on conservation (i.e., shift money from the STSSN to the camps in Mexico.)

- Prioritize data collection methods.
- Funding should be commensurate with portion of time turtles spend in each habitat.
- Add aquaculture as a threat category.
- Suggest acknowledging in the narrative that a threat upon delisting is the potential for legal harvest.